Facilities Quarterly

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY◆FACILITIES DEPARTMENT NEWSLETTER

APRIL
2001

FACILITIES WELCOMES NEW DEPUTY MANAGER

When asked what it was about Berkeley Lab that made her want to work here, Margaret Goglia singled out this passage from the job announcement: "Lawrence Berkeley National Lab invents state-of-the-art every five minutes or so. We rarely do the same thing twice. Berkeley Lab is one of the most creative, collaborative, and interesting environments that you can work in."

Margaret Goglia

Goglia—who is taking over from Bert Schleifer as Deputy Facilities Manager and Projects Group Leader—is no stranger to the research environment, having spent many years as an architect and project manager at UCLA and the UC Office of the President (UCOP). She describes working with researchers and scientists on facilities development as "…energizing. It's wonderful to get a glimpse of what it is they do." And project completion has its own satisfaction: "…the sense of accomplishment in facilitating whatever the mission is."

Defining that mission in terms of buildings and infrastructure, though, is a big challenge. "There aren't a lot of reference points when you're designing basic research facilities," Goglia explains. The exploratory nature of basic research requires a "balancing act" on the part of planners, architects, and engineers. "There's a very interesting sort of synergy between buildings and science. Our buildings are an extension of the scientific endeavor in that they are a shell or container for that activity." This container must support current science but have the flexibility to accommodate an often unforeseeable future. "We try to be proactive in anticipating research needs, but the research is going to change in five years, while permanent buildings have a life of 40 to 50 years. One of the major challenges here at the Lab is aging buildings that don't meet the evolving needs of science or standards for conditioned electrical power, hazardous materials, safety, and so on."

Addressing aged infrastructure and extending the life of facilities requires, above all else, good planning and project management. "The key is to be prepared with a good long-range development plan, lots of options, and good self knowledge, so you can go to users with good information about what is realistic to get done. We as architects, engineers, and planners look at the resources—land, roads, utilities, landscape, buildings—and ask, 'What is it good for?'" A plan that takes advantage of Berkeley Lab's unique assets, Goglia believes, will attract the kinds of unique science that will secure the Lab's future. "This approach could be described as 'build it and they will come.' In the meantime, keep working at improving operations so you are cost effective in pursuing long

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BERT SCHLEIFER RETIRES

After nearly 18 years of service to Berkeley Lab, Bert Schleifer is retiring. The longtime Deputy Facilities Manager and Projects Group Leader came to the Lab from Bechtel Corporation, where he was an assistant chief electrical engineer with Bechtel's Refinery and Chemical Division. Bert had wide-ranging responsibilities overseeing multiple construction projects for Bechtel at job sites from Alaska's Prudhoe Bay to South Korea and New Zealand.

Bert had had his eye on Berkeley Lab for some time, before travel weariness and the right opportunity combined to bring him onboard in 1983 as Electrical Section Head. His immediate mission was daunting: modernization of the Lab's precarious electrical distribution system. As Bert recalls, "Up until that time, the Lab's electrical needs had been handled on a 'build-as-you-go' basis—more like Winchester Mystery House—rather than as a system. It wasn't safe and didn't meet the purpose. A fault could shut down half the Lab, and major shutdowns did occur."

Bert was instrumental in planning and realizing a series of major line-item projects, including the Original Labsite Substation, ALS Substation, East Canyon Switching Station, and Blackberry Switching Station, that together have made the 12-kV system both safe and reliable. In fact, the final element in this long-term effort, the Grizzly Substation Improvement, is now in

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GOGLIA

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term objectives."

In Goglia's view, Berkeley Lab's integration of operations and maintenance functions with architecture and engineering, planning, construction, and project management contributes to these objectives. "Not everyone [in other institutions] has the advantage of working with all these groups. Here at Berkeley Lab we are all part of the continuum of stewardship for the physical setting—and the sum is greater than the parts. In the private sector, when you're done constructing a facility, you're done. Here, we must be good stewards of the physical setting. We have to think about meeting the long term needs of the science in cost effective ways as well as ease of maintenance, durability, fire safety, seismic risk mitigation, handicapped access, hazmat concerns, and all the rest."

Goglia, who is a licensed architect, brings a wealth of experience to her new position. Before coming to Berkeley Lab, she was Associate Director for Design and Construction Policy at UCOP, as well as director of the UCOP Project Management Institute, a systemwide design and project management training program. Her responsibilities included legislative analysis and advocacy, policy development, development of design and construction contracts, project management advisory services for the UC campuses, and liaison with the design and construction industry on a systemwide basis. Goglia began at

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FROM THE FACILITIES MANAGER...

This issue of the Facilities Quarterly has turned out to be a people issue. As we say goodbye to Bert, we welcome Margaret. We were lucky to have an overlap were Bert and Margaret could work together for awhile. Mike Marchese is changing the way we work in estimating / work planning and has taken on the job of project manager for the institutional LSAD jobs. For those who are curious about how estimates are done and what degree of accuracy one may expect, Mike explains how an estimate develops.

We are losing a lot of people to retirement that we have depended upon for a long time. We may not see one-for-one replacements. The budget has tightened and the amount of work expected is decreasing; for example, we will not get a new Line Item Project next year. I have asked the managers in Facilities to look at their organizations and see if we can do some creative thinking about how we fill the vacancies resulting from retirements. We must also look to the future on who will fill supervisory positions as others retire.

Nel Boone and John Hutchings have been selected to co-chair the Department's Diversity Committee. This committee will seek methods to help the department increase diversity in its workforce.

I am disappointed to report an increase in reportable accidents this last quarter. Two accidents occurred in the same area involving the same type of work. This shows that we are not doing enough to keep ourselves and others safe. Subcontractors have also failed to ensure that their workers understand the higher level of safety we demand. Within an hour the construction safety engineer found two subcontract workers engaged in unsafe activities that common sense should have prevented. It is of paramount importance that we all redouble our efforts to do our work safely and that everyone in our workplace—Lab employee or contractor—also works safely.

Bob Camper

Work SMART...
WORK SAFELY...
If it is not safe, STOP the work.

SCHLEIFER RETIRES

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progress, with completion due in May.

Bert became head of Plant Design in 1988 and, with the 1992 merging of Plant Design and Project Management, took over responsibility for both functions as Projects Group Leader. This was a major period of transition for Berkeley Lab, as it went from being a single-purpose accelerator laboratory to a multiprogram laboratory. Bert's group had design and management responsibilities for a number of construction projects, including the Genome Sciences Building (Building 84), Hazardous Waste Handling Facility (Building 85), Advanced Light Source, Building 66, NERSC, the Joint Genome Institute, and the Oakland Scientific Facility. Additional infrastructure projects included roof replacements, seismic stablizations to hillsides as well as Building 90, sanitary sewer rehabilitation, and the current Sitewide Water Distribution Upgrade, Phase 1. Individual buildings—notably 70, 70A, and 74— received significant upgrades to fume hoods, air supply and exhaust, laboratories, elevators—the list goes on.

Bert will certainly be remembered for his significant contributions to improving the Berkeley Lab infrastructure. All who worked with him have benefitted from his example of managerial effectiveness, dedication, and good will.

Now that he's retired, Bert plans on doing things he hasn't had time to do, namely tennis, skiing, bicycling, hiking, and travel. What will he miss about Berkeley Lab? "…the great, competent people…that's made all the difference."

AT YOUR SERVICE

FACILITIES DEPARTMENT

Facilities provides Berkeley Lab with a full range of architectural and engineering, construction, and maintenance services for new facilities and for modification and support of existing facilities.

Architectural and engineering services include facility planning, programming, design, engineering, project management, and construction management. Maintenance and construction functions include custodial, gardening, and lighting services; operation, service, and repair or replacement of equipment and utility systems; and construction of modifications, alterations, and additions to buildings, equipment, facilities, and utilities. Additional services include bus and fleet management, mail distribution, stores distribution, property management, property disposal, cafeteria operations, and electronics repair.

Ongoing Facilities activities include renewal and upgrade of site utility systems and building equipment; preparation of environmental planning studies; in-house energy management; space planning; and assurance of Laboratory compliance with appropriate facilities-related regulations and with University and DOE policies and procedures.

The Work Request Center expedites facility-related work requests, answers questions, and provides support for facility-related needs.

FOCUS ON SERVICE: PLANNING AND ESTIMATING

Planning has been defined as "determining the appropriate methods, resources, and staffing required to complete a work order efficiently and effectively." Under new group leader Mike Marchese, the Facilities Planning and Estimating Group is refocusing on this mission.

Mike comes to Berkeley Lab from Swinerton Management & Consulting, Inc, the construction management division of the big San Francisco contractor, Swinerton and Walberg. His previous position was with the major international contractor Sverdrup, Inc., also as a senior estimator. He combines this private sector experience with many years of estimating experience at Lawrence Livermore National Laboratory, giving Mike a perspective that encompasses knowledge of the institutional environment and the private sector mentality, as well as a commitment to customer-oriented service. Mike's objective will be to "…work very hard to give our customers every possible reason to use the Group. I will be personally going out and meeting a lot of the requestors that call in to the Work Request Center, so that our planner/estimators can better define customer needs and find ways to accomplish the work in a timely and cost-effective manner."

"We need to provide a flexible, more intelligent response to the initial queryæfind out what the customer needs and scale our response to the requirements of each job," Mike continues. "Estimators will be interacting more with the clientsæacting as an up-front information source for the customer, using their experience to give customers a range of options and help them make more informed decisions. Our goal is to provide personalized service."

Mike's group will be cooperating closely with the Work Request Center to ensure that incoming jobs receive this kind of individualized attention. This "quality-at-the-source" approach can make a real difference down the line. For example, assessment by an estimator can ensure that work that should be passed directly to the crafts is not "pushed off to design if it is not required." Incurring delays and cost. "If a customer calls in to the work request center with a request to power a piece of equipment," Mike explains, "It may or may not require engineering. It may simply involve utilizing an existing service that needs moving. Formerly, such a job would probably have gone directly to an engineer to determine whether or not design is needed. Now, Planning and Estimating can make some of these initial assessments, allowing simpler jobs to be

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COMPLIMENTS

Dr. James P. O'Neil, Biomedical Isotope Facility supervisor, sends his appreciation for "…the extra effort as well as time commitment…" by Paul Fleming during a Facilities project to open space in the B56 mechanical room. Due to the operating schedule of the Biomedical Isotope Facility (BIF), a window for a complete system shutdown for the 1 – 2 weeks estimated for the project was not available until June 2001. Since a complete shutdown of the Biomedical Isotope Facility (BIF) wasn't feasible, Paul supplied a secondary source of cooling water for the cyclotron cooling system. "This required Paul to be present to instate this changeover at the beginning as well as the end of each of the many system interruptions," says O'Neil. "In addition, Paul made us aware of a problem with the capacity a heat exchanger used on this system. I thank Paul for his efforts and the continued good work in preventive maintenance."

Stan Kluz, Esnet Network Technical Services group leader, sends his thanks to Dave Tudor for his efforts in connecting the new UPS units in 50-2275 to AC power at a much lower cost than originally projected.

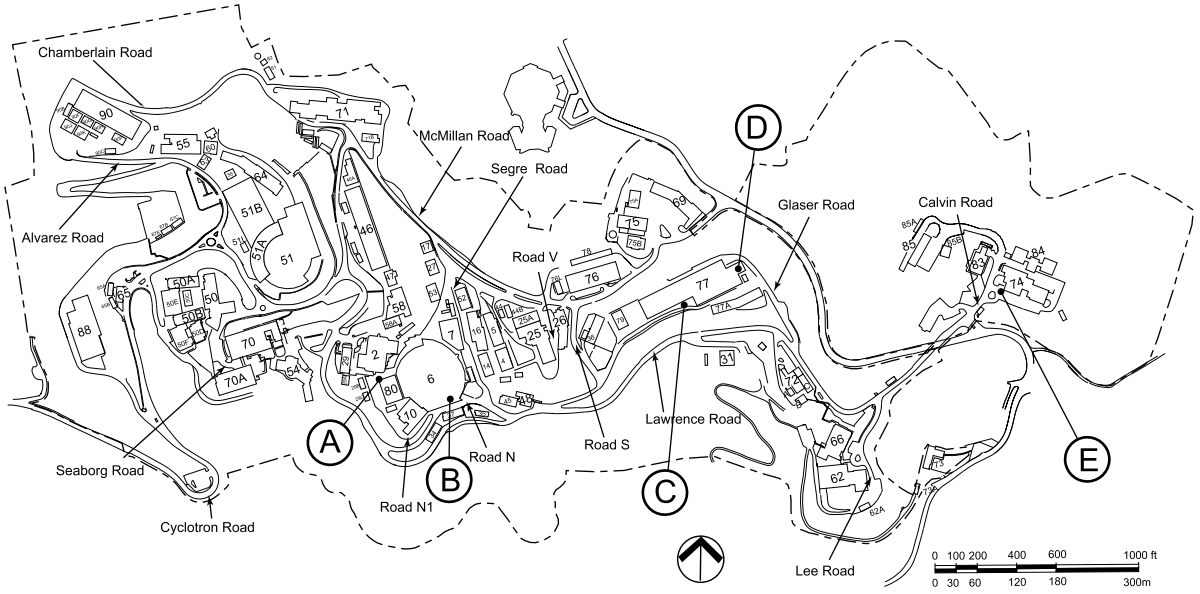
WORK REQUEST CENTER

Telephone	6274
Fax	7805
E-Mail	WRC@lbl.gov
Mailstop	76-222
Web	web3.lbl.gov/wrc

WRC welcomes questions or comments about Facilities Quarterly.

CONSTRUCTION AND YOU

Current construction projects affecting parking, or vehicular or pedestrian circulation



Project Contact. The name in parentheses after each project is the Project Manager (PM) or other person who is responsible for project oversight: coordinating all phases from design through construction; controlling cost, scope and schedule; and ensuring client satisfaction. This person will be happy to answer any questions about the project.

Bldg 2: Ventilation Upgrade Project

(A)

APR	MAY	JUN

Parking spaces along the south side of Bldg 2 will be reserved for contractor use. (Richard Stanton, x6221)

Bldg 6: 2nd Floor Office & Lab Buildout

(B)

APR	MAY	JUN

Parking spaces along the south side of Bldg 6 will be reserved for contractor use. (Richard Stanton, x6221)

Bldg 77: Rehabilitation of Building Structure and Systems

(C)

APR	MAY	JUN

Construction is in progress around the building perimeter and in selected areas within the building. Laydown areas will be located adjacent to Building 77 and Glaser Road. (Bill Wu, x5216)

Bldg 77–142: Clean Room Installation

APR	MAY	JUN

(D)

Construction is expected to start in January. Location of laydown areas and contractor parking area will be adjacent to Building 77. (Bill Wu, x5216)

Bldg 74: Expansion of Annual Holding Facility

APR	MAY	JUN

(E)

Parking spaces near the southwest corner of Building 74 will be reserved for contractor parking and laydown areas. (Richard Stanton, x6221)

"AUTON—ONSTRUTON AREA"

Construction barricades and warnings are there for your protection. Under no circumstances should you cross a construction barricade, or disobey posted warnings or directions. Contact the Project Manager for escorted access to construction areas.

ON THE DRAWING BOARD

projects in study or conceptual design

Bevalac Decontamination and Decommissioning

Now in the planning stage, this project will remove and dispose of the former Bevalac heavy-ion accelerator and many associated structures. The entire Building 51 complex is slated for removal. (Dave Tudor, x4171)

Building 77, Rehabilitation of Building Structure and Systems, Phase 2

This project will correct mechanical, electrical and architectural deficiencies in Buildings 77 and 77A. The conceptual design phase is in progress. Funding will be requested for FY 2003. (Bill Wu, x5216)

Rehabilitation of Site Mechanical Utilities, Phase 2

This project will extend the useful lives of Berkeley Lab's natural gas, low conductivity water (LCW), compressed air, and storm drain systems. All service risers in the natural gas system will be replaced with nonmetallic pipe. LCW system aluminum pipe will be replaced with stainless-steel pipe. Cathodic protection will be added to the compressed air system. Steel pipe in the storm drain system will be replaced or relined. Facilities has prepared a conceptual design report for FY2002 funding consideration. (Dan Galvez, x6213)

Research Support Building

Planning is going forward on a new 2,900 sq m (30,000-SF) building that will house key Berkeley Lab administrative functions now scattered across the site. This "Town Center" will be located on the site of Building 29, which will be demolished. Its central location will allow efficient administration and easy access for all staff and guest researchers. (Richard Stanton, x6221)

IN PROGRESS

funded projects

Bldg 2: Ventilation Improvements

This project will upgrade the heating, ventilation and air conditioning system in Building 2 to provide improved temperature control, improved pressure control and increased exhaust air capacity. (Richard Stanton, x6221)

Bldg 6: Laboratory and Office Buildout

This project will build out approximately 1,100 sq m (12,000 sq ft) of laboratory, office, and research support space in the existing unfinished area on the second floor of Building 6. (Richard Stanton, x6221)

Bldg 6: Sector 4 Support Building

Project design is in progress for an equipment staging area for Beamline 4. This 100 sq m (1,100 sq ft) single-story addition will be located between buildings 10 and 80, on the west side of Building 6 (Dan Galvez, x6213)

Bldg 74: Animal Holding Facility Expansion

This project will convert Building 74 rooms 223, 227, and 231 from wet lab use to animal holding rooms. Room 235 will be modified for use as a procedure room. The work includes demolition, HVAC, electrical, plumbing, painting, doors, and hardware. (Richard Stanton, x6221)

Bldg 77: Rehabilitation of Building Structure and Systems

Construction started in November. This project will arrest differential settlement of Building 77, replace building cross bracing, and realign bridge crane runways. (Bill Wu, x5216)

Bldg 80: ALS Modifications to Room 80-109

New wall openings, with rollup doors, will be installed in Building 80 room 109 to provide additional ALS beamline endstation space, while maintaining ALS perimeter access walkways. (Richard Stanton, x6221)

Bldg 88: Seismic Anchoring

Architectural and engineering final design has been completed for seismic reinforcement of caves 1 through 5. Completion of work in cave 4 is scheduled for the first quarter of FY01. (Chuck Taberski, x6076)

Grizzly Substation Improvement

Amelco Electric, under contract to the University of California, has begun construction of improvements to the Grizzly Substation. The substation is de-energized, and all LBNL electrical power is being supplied by the University's new Hill Area Substation, located at the corner of Road S and Glaser. Construction will be completed in May 2001 (See article in *Facilities Quarterly*, 7 / 2000). (Chuck Taberski, x6076)

Sitewide Water Distribution Upgrade, Phase 1

Much of Berkeley Lab's fresh-water supply system has been in place for over 30 years. This project will replace about 0.9 mile (1.5 km) of cast iron pipe and upgrade the remaining 5 miles (8 km) of pipe with corrosion protection, new valves, pressure reducing stations, improvements to an existing water storage tank, and a new water storage tank in the East Canyon area. Project design is in progress. (Dan Galvez, x6213)

GOGLIA *continued from page 2*

UCOP in 1996 as manager of construction services.

Prior to joining UCOP, Goglia spent 12 years with the UCLA Capital Programs office, ultimately as Associate Campus Architect. At the Los Angeles campus she had responsibility for numerous science, high-tech, and hospital design, construction, adaptive reuse, and renovation projects. Earlier in her career, she was a private practice architect and architectural consultant, and an assistant professor of architecture at California State Polytechnic University at Pomona. She holds a BA degree from the State University of New York at Buffalo and a master's degree in Environmental Design from the Yale School of Art and Architecture. Goglia currently chairs the Board of Directors of the Western Council of Construction Consumers and is an active member of the American Institute of Architects, for which she is a Continuing Education System Learning Unit Provider.

Along with Margaret Goglia's wealth of experience comes an obvious wealth of enthusiasm: "We're doing important research. My job is to help that happen to the best of my professional capabilities. I'm enthusiastic about being here and look forward to working with researchers and administration. I'm almost humbled by my good fortune—The opportunity to work at Berkeley Lab is so exciting!"

STORES TO STOCK ENERGY-EFFICIENT LAMP

Beginning in early June, Stores will stock a new, high performance, energy-efficient table lamp developed by Berkeley Lab researchers. If you would like to know when Stores receives these lamps, please contact Antonia Reaves (x7228, areaves@lbl.gov). For more information on the lamp, go to: http://lighting.lbl.gov/projects/table/table.html.

PLANNING AND ESTIMATING *continued from page 3*

fast-tracked while freeing engineers to concentrate on code-related work."

This screening process also helps ensure that jobs which require design elements or involve safety issues don't slip through the cracks. "Work orders with design must include a hazards analysis and inspections to make sure work is done safely and is code compliant, " says Mike, "It's really important that these things are not overlooked." Mike is also working with the Small Projects Group to shorten turnaround time and achieve other efficiencies with larger projects. According to Mike, "The Small Projects Group under the direction of Chuck Taberski is sensitive to cost and schedules of our customers." Mike and Chuck have been working closely together to provide improved cost information and service to Facilities customers. Their goals are to continue focusing on savings for the customer while still meeting project requirements and schedule. Sometimes this means using both Facilities crafts and subcontractors on a project.

In addition to its work with the Small Projects Group, Planning and Estimating is now providing change order support for bigger GPP and line item projects, such as the new Building 77 clean room, Building 77 seismic rehabilitation, and Building 6 buildout. "We have the expertise and the responsibility to ensure contractor costs are reasonable." An estimator will "walk" each change order with the project superintendent, recommend a fair and reasonable cost for changes in scope , and, if requested, provide schedule analysis for contract extensions. Mike's experience in the private contracting marketæhis familiarity with proprietary estimating techniques and standards, competitive cost control techniques, as well as his understanding of the contractor's point of viewæprovide him with valuable tools in acting as advocate for the lab and individual programs. He has also recently hired a new senior level construction estimator with similar qualifications, Warren

AACE Estimate Levels[1]

Level	Accuracy (%)[2]	Purpose	Based On…
(Order of magnitude)	-30 to +50	Planning, feasibility, or scoping studies.	Previous similar cost information. Parametric modeling.
(Budget/conceptual)	-15 to +30	Assure project feasibility.	Preliminary drawings, major equipment, outline specifications.
(Preliminary or Title 1)	-15 to +30	Verify costs.	Data sufficient for budget preparations.
(Definitive or Title 2)	-5 to +15	Prepare bid packages, construction budget.	Detailed data.
(Detailed, Title 3 or Construction)	-5 to +15	Bid check and project financial control.	Complete drawings, specifications, awarded contracts.

[1]Source: DOE/FETC-99/1100, "Waste Management Project Contingency Analysis," Table 1, Cost Estimate Classes and Characteristics, US Department of Energy, Federal Energy Technology Center, Pittsburgh, PA; Morgantown WV.
[2]ANSI Standard

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McPherson, to assist in this area.

After a customer calls in a request to the Work Request Center, the first question he or she is likely to hear from Mike is “Do you have a budget?” It is important to know whether a job has been budgeted or is still in the feasibility stages. “If your project is still just an idea,” says Mike, “Planning and Estimating can provide an ‘order of magnitude’ estimate and possibly offer you some value engineering options.” Such estimates are often based on previous similar jobs where parametric modeling may be used to develop the estimate. The cost is minimal, generally involving less than a day of effort. An order-of-magnitude estimate will help define overall scope and budget and identify potential problems. Mike is refining the estimate format to be more consistent with industry practices. Important improvements made so far include statement of the scope of work in the estimate assignment of classifications to all estimates.

Planning/Estimating now assigns five such classifications, as defined by the Association for the Advancement of Cost Engineering, or AACE (see table). Each classification represents a level of accuracy based on the quality of information used to prepare the estimate and provides guidelines for the estimates are prepared. For example, a project with completed design and specification could receive a Class 1 estimate æthe highest level of detail, quality and accuracy. This level of effort is not always necessary or cost effective, though, and Mike believes that the estimator’s experience can be important in setting budgets. “We are committed,” says Mike, “ to working as your advocate to help budget and plan your projects for a successful outcome.”

Mike Marchese will be very happy to discuss any aspect of Planning and Estimating’s range of services. He can be reached by phone at extension 6832, by e-mail at MJMarchese@lbl.com, or by mail at mail stop 76-0222.